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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,209	07/12/2001	Tadahiro Ohmi	SUGI 0070	2969

24203 7590 07/02/2004

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EXAMINER	
KERNS, KEVIN P	

ART UNIT	PAPER NUMBER
1725	

DATE MAILED: 07/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/905,209	OHMI ET AL.	
	Examiner	Art Unit	
	Kevin P. Kerns	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) *3 and 4* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 5-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-13* are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 July 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/16/01 & 8/22/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicants' election with traverse of Group Ia (claims 1, 2, and 5-13) in the reply filed on June 4, 2004 is acknowledged. The traversal is on the ground(s) that the species are so closely related that the field of search necessary to properly search any one of the species would encompass the other species as well. Therefore, since a different search is not required, there is no serious burden as required by MPEP 803.

This is not found persuasive because, contrary to the applicants' belief, the differences between the disclosed species are such that each species would require a different search. (e.g. the search for species Ib – a reactor comprising a reflector positioned opposite a gas feed port and a moisture take-out port within the reactor, as shown in Figure 4, would not uncover the species Ia reactor having an inlet reflector and an outlet reflector, as shown in Figure 1.).

To further clarify his position, the examiner notes that the election of species is proper because the species disclosed in the instant application are independent inventions as defined in MPEP 806.04 ("If it can be shown that the two or more inventions are in fact independent, applicant should be required to restrict the claims presented to but one of such independent inventions"). Further, regarding election of species, MPEP 808.01(a) sets forth that when "claims are directed to independent inventions, restriction is proper pursuant to 35 USC 121, and it is not necessary to show a separate status in the art or separate classification.".

The requirement is still deemed proper and is therefore made FINAL.

Priority

2. Acknowledgment is made of applicants' claim for foreign priority based on an application (PCT/JP00/03659) dated June 5, 2000. It is noted, however, that the applicants have not filed a certified copy of the PCT application as required by 35 U.S.C. 119(b).

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the round recession with a flat bottom (claim 2) and the connector formed of a plurality of small-diameter pipe sections and large-diameter pipe sections alternated to form a pipe (claim 9) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement

sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. Figure 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities: throughout the specification, the numeral "6" has been incorrectly used to characterize the reflector on the inlet side, which uses reference numeral "12" in the drawings. On page 9, line 21, "11" should be deleted after "coating". On page 9, line 27, "16 fixing bolt hole"

should be deleted, as reference number "16" is not in any of the drawings. Appropriate correction is required.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1, 2, 5, 7, and 8 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, and 6 of U.S. Patent No. 6,180,067. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed reactor includes two body members (reactor structural components on the inlet and outlet sides) connected by a weld and defining an interior space; a gas feed passage engaged in a round recession with the inlet side structural component; a moisture gas outlet passage engaged in a round recession with the outlet side structural component; an inlet reflector positioned opposite the inlet gas feed passage; an outlet reflector positioned opposite the moisture

gas outlet passage; and a platinum coating film (including a non-catalytic TiN barrier coat and a platinum coat) formed on the inner wall surface of the reactional furnace, such that mixed hydrogen and oxygen are fed into the reactor interior space through the gas feed passage to contact the platinum coating film to react and form water to be obtained from the moisture gas outlet passage. One of ordinary skill in the art would have recognized that the structural features of the present application are nearly identical to those set forth in US 6,180,067, and it would have been obvious to remove the diffusion filter set forth in US 6,180,067 during operation of the reactor, as open-ended "comprising" language exists in the present application.

8. Claims 1, 2, 5, 7, and 8 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 10-12, 16, 17, 20, and 21 of U.S. Patent No. 6,733,732. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed reactor includes two body members (reactor structural components on the inlet and outlet sides) connected by a weld and defining an interior space; a gas feed passage engaged in a spherical recess with the inlet side structural component; a moisture gas outlet passage engaged in a spherical recess with the outlet side structural component; an inlet reflector positioned opposite the inlet gas feed passage; an outlet reflector positioned opposite the moisture gas outlet passage; and a platinum coating film (including a non-catalytic TiN barrier coat and a platinum coat) formed on the inner wall surface of the reactional furnace, such that mixed hydrogen and oxygen are fed into the

reactor interior space through the gas feed passage to contact the platinum coating film to react and form water to be obtained from the moisture gas outlet passage. One of ordinary skill in the art would have recognized that the structural features of the present application are nearly identical to those set forth in US 6,733,732, and it would have been obvious to one of ordinary skill in the art that the first and second spherical recesses set forth in US 6,733,732 are analogous to the round recessions set forth in the application, for facilitating the feeding of gases and extraction of moisture.

9. Claims 1, 2, 8, and 10-12 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 7-18 of copending Application No. 09/773,605 (analogous to US 2002/0122758). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed reactor includes two body members (reactor structural components on the inlet and outlet sides) connected by a weld and defining an interior space; a gas feed passage engaged in a round recession with the inlet side structural component; a moisture gas outlet passage engaged in a round recession with the outlet side structural component; an inlet reflector positioned opposite the inlet gas feed passage; an outlet reflector positioned opposite the moisture gas outlet passage; a temperature regulator in the form of cooling fins provided on the outside walls of the structural components; and a platinum catalyst film formed on the inner wall surface of the reactional furnace, such that mixed hydrogen and oxygen are fed into the reactor interior space through the gas feed passage to contact the platinum coating film to react

and form water to be obtained from the moisture gas outlet passage. One of ordinary skill in the art would have recognized that the structural features of the present application are nearly identical to those set forth in 09/773,605, and it would have been obvious to remove the pressure reducing means set forth in 09/773,605 during operation of the reactor, as open-ended "comprising" language exists in the present application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 9, it is unclear what is meant by the limitation "wherein the connector formed of a plurality of small-diameter pipe sections and large-diameter pipe sections, and that small-diameter pipe sections and large-diameter pipe sections are *alternated* to form a pipe". What is meant by the pipes being "alternated"?

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 1, 2, 5-11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 98/57884 (analogous to US 6,093,662).

WO 98/57884 discloses a method and apparatus for generating water for semiconductor production (from reaction of hydrogen and oxygen), in which the apparatus includes two body members (reactor structural components on the inlet and outlet sides) connected by a weld and defining an interior space; a gas feed passage engaged in a round recession with the inlet side structural component, such that the gas feed passage includes separate hydrogen and oxygen feed pipes that connect to the gas feed passage; a moisture gas outlet passage engaged in a round recession with the outlet side structural component; an inlet reflector positioned opposite the inlet gas feed passage; an outlet reflector positioned opposite the moisture gas outlet passage; a heating/cooling unit (temperature regulator) for the reactor structural components; and a platinum coating film (including a non-catalytic TiN barrier coat and a platinum coat)

formed on the inner wall surface of the reactional furnace, such that mixed hydrogen and oxygen are fed into the reactor interior space through the gas feed passage to contact the platinum coating film to react and form water to be obtained from the moisture gas outlet passage (abstract; and Figures 1 and 7-10; also see Figures 1 and 7-10 and columns 1, 2, 4, and 7-9 of US 6,093,662).

14. Claims 1, 2, 5-11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0 878 443.

EP 0 878 443 discloses a reactor for generating moisture (from reaction of hydrogen and oxygen), in which the reactor includes two body members (reactor structural components on the inlet and outlet sides) connected by a weld and defining an interior space; a gas feed passage engaged in a round recession with the inlet side structural component, such that the gas feed passage includes separate hydrogen and oxygen feed pipes that connect to the gas feed passage; a moisture gas outlet passage engaged in a round recession with the outlet side structural component; an inlet reflector positioned opposite the inlet gas feed passage; an outlet reflector positioned opposite the moisture gas outlet passage; a heating/cooling unit (temperature regulator) for the reactor structural components; and a platinum coating film (including a non-catalytic TiN barrier coat and a platinum coat) formed on the inner wall surface of the reactional furnace, such that mixed hydrogen and oxygen are fed into the reactor interior space through the gas feed passage to contact the platinum coating film to react

and form water to be obtained from the moisture gas outlet passage (abstract; pages 3-5 and 7-23; and Figures 1-4, 14, 27, 38, 43, 45, 49, 50, 52, and 53).

15. Claims 1, 2, 5, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 10-297907 (analogous to applicants' admitted prior art; specification – page 1, lines 18-27; page 2, lines 1-20; and Figure 6).

JP 10-297907 (and applicants' admitted prior art) disclose a reactional furnace for generating moisture, in which the furnace includes two furnace body members (reactor structural components on the inlet and outlet sides) connected by weld 6 and defining an interior space; a gas feed passage engaged in a round recession with the inlet side structural component; a moisture gas outlet passage engaged in a round recession with the outlet side structural component; an inlet reflector positioned opposite the inlet gas feed passage; an outlet reflector positioned opposite the moisture gas outlet passage; and a platinum coating film (including a non-catalytic TiN barrier coat and a platinum coat) formed on the inner wall surface of the reactional furnace, such that mixed hydrogen and oxygen are fed into the reactor interior space through the gas feed passage to contact the platinum coating film to react and form water to be obtained from the moisture gas outlet passage (JP 10-297907; abstract; and Figures 1, 3, and 7; and applicants' admitted prior art; specification – page 1, lines 18-27; page 2, lines 1-20; and Figure 6).

16. Claims 1, 2, 5, and 7-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Minami et al. (US 6,334,962).

Minami et al. disclose a moisture supply process and apparatus (from reaction of hydrogen and oxygen), in which the apparatus includes two body members (reactor structural components on the inlet and outlet sides) connected by a weld and defining an interior space; a gas feed passage engaged in a round recession with the inlet side structural component, such that the gas feed passage includes separate hydrogen and oxygen feed pipes that connect to the gas feed passage; a moisture gas outlet passage engaged in a round recession with the outlet side structural component; an inlet reflector positioned opposite the inlet gas feed passage; an outlet reflector positioned opposite the moisture gas outlet passage; a heating/cooling unit (temperature regulator) for the reactor structural components; and a platinum coating film (including a non-catalytic TiN barrier coat and a platinum coat) formed on the inner wall surface of the reactional furnace, such that mixed hydrogen and oxygen are fed into the reactor interior space through the gas feed passage to contact the platinum coating film to react and form water to be obtained from the moisture gas outlet passage (abstract; column 1, lines 5-68; column 2, lines 1-5; column 3, lines 4-33; column 6, line 21 through column 9, line 61; and Figures 1, 2, and 4-8).

The applied reference has a common assignee and inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention

disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

17. Claims 1, 2, 5, 7, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohmi et al. (US 6,180,067).

Ohmi et al. disclose a moisture supply process and apparatus (from reaction of hydrogen and oxygen), in which the apparatus includes two body members (reactor structural components on the inlet and outlet sides) connected by a weld and defining an interior space; a gas feed passage engaged in a round recession with the inlet side structural component; a moisture gas outlet passage engaged in a round recession with the outlet side structural component; an inlet reflector positioned opposite the inlet gas feed passage; an outlet reflector positioned opposite the moisture gas outlet passage; and a platinum coating film (including a non-catalytic TiN barrier coat and a platinum coat) formed on the inner wall surface of the reactional furnace, such that mixed hydrogen and oxygen are fed into the reactor interior space through the gas feed passage to contact the platinum coating film to react and form water to be obtained from the moisture gas outlet passage (abstract; column 1, lines 19-45; column 3, line 3 through column 5, line 32; column 6, line 15 through column 13, line 33; and Figures 1, 2, 5-8, 11, and 13).

The applied reference has a common assignee and inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it

constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over any one of WO 98/57884 (analogous to US 6,093,662), EP 0 878 443, or Minami et al. (US 6,334,962).

WO 98/57884, EP 0 878 443, and Minami et al. individually disclose the features of claims 1, 10, and 11 above. Neither WO 98/57884, EP 0 878 443, nor Minami et al. specifically discloses the use of cooling fins in their respective cooling arrangements.

However, one of ordinary skill in the art would have recognized that the use of cooling fins to dissipate heat are readily used due to the greatly increased surface area of the exterior of the reactor shell, for the purpose of avoiding high temperatures during the reaction process. Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the cooling arrangements of the reactors, as individually disclosed by WO 98/57884, EP 0 878 443, and Minami et al., by using cooling fins on the exterior surface of the reactor, in order to increase the surface area for greater heat transfer and improved cooling efficiency.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,274,098 is also cited as related art.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571)

272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns Kevin Kerns 6/26/04
Examiner
Art Unit 1725

KPK
kpk
June 26, 2004